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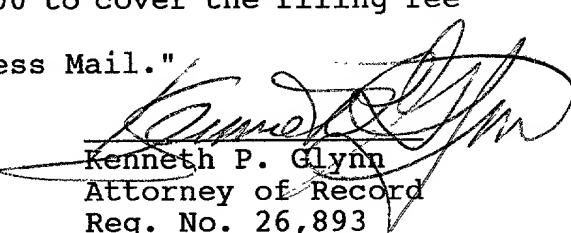
Sir:

Transmitted herewith for filing is:

Inventor: Jerome R. Mahoney  
For: Voice Activated/Voice Responsive Item Locator  
Docket No.: IVC-103A

Enclosed are:

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|---|---|
| <input checked="" type="checkbox"/> The Patent Application  | <input checked="" type="checkbox"/> Declaration and<br>Certification<br>Power of Attorney |
| <input checked="" type="checkbox"/> Copies of Prior Art References                                  | <input type="checkbox"/> Certified Copy of  |
| <input checked="" type="checkbox"/> Small Entity Status Declaration                                 | <input type="checkbox"/> Application  |
| <input checked="" type="checkbox"/> Information Disclosure Statement<br>(included in specification) | <input checked="" type="checkbox"/> 3 Sheets of drawings                                  |
| <input checked="" type="checkbox"/> PTO 1449  |   |
| <input checked="" type="checkbox"/> An Assignment of the invention to: iVoice.com, Inc.             |   |
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Steven P. Glynn

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(Docket No. IVC-103A)

Appendix E

Applicant or  
Patentee: Jerome R. Mahoney  
Serial No. or Patent No.: \_\_\_\_\_ Attorney's  
Filed or Issued: \_\_\_\_\_ Docket No.: IVC-103A  
For: Voice Activated/Voice Responsive Item Locator

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9 (f) and 1.27 (b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9 (c) for purpose of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled Voice Activated/Voice Responsive Item Locator described in

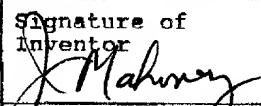
- (X) the specification filed herewith  
( ) application serial no. \_\_\_\_\_, filed \_\_\_\_\_  
( ) patent no. \_\_\_\_\_, issued \_\_\_\_\_.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9 (c) if that person had made the invention, or to any concern under 37 CFR 1.9 (d) or a non-profit organization under 37 CFR 1.9 (e).

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Inventor	Name of Inventor	Name of Inventor
Jerome R. Mahoney		
		
8/7/2005		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

VOICE ACTIVATED/VOICE RESPONSIVE ITEM LOCATOR

Inventor: Jerome R. Mahoney

Attorney Docket No. IVC-103A

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VOICE ACTIVATED/VOICE RESPONSIVE ITEM LOCATOR

Attorney Docket No: IVC-103A

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BACKGROUND OF THE INVENTION

1. Field of the Invention

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The present invention relates to voice activated/voice responsive item locators, i.e. item directories which direct a user such as a consumer or shopper, to a specific location to view, treat, retrieve, order, purchase or otherwise use the information obtained in the system. Typically, the present invention could be used at retail stores to locate items to be purchased. Alternatively, it could be used at a production facility or distribution facility having a large number of parts, to locate specific parts for an employee. In other

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embodiments, it could be used in non-commercial  
entities, such as a public library to locate a  
particular book. The locator of the present  
invention relies upon a specific software module  
5 to accomplish voice recognition and response, and  
includes manager programming for customization,  
updates and modifications.

2. Information Disclosure Statement

The following prior art patents represent  
10 various inventions relating to machines involving  
speech recognition for voice-based operation and  
thus illustrate known voice recognition  
applications:

U.S. Patent No. 5,111,501 to Masanobu

15 Shimanuki describes a telephone terminal device  
equipped with a transmitter microphone, a

receiver, a speech recognition unit that receives  
and recognizes speech signals from the  
transmitter microphone and a circuit to reduce  
the level of signals send from a telephone

5 network to the receiver when the speech  
recognition unit receives speech signals from the  
transmitter microphone. Further, this device is  
preferably equipped with a speech reproduction  
unit that reproduces the speech information

10 stored in a memory, in response to the  
information of recognition result from the speech  
recognition unit, and a circuit that prevents  
transmission of signals from the telephone

network to the receiver when the regenerated  
15 speech information is sent to the receiver.

Furthermore, it is desirable for this device to

be provided with a circuit that prevents generation of ringing tones when an incoming call arrives.

U.S. Patent No. 5,136,634 to David C. Rae et

5 al. describes voice operated facsimile machine network which includes a method and apparatus for transmitting specifically requested graphic and/or textual data from an unattended database storage location to a requestor's facsimile  
10 machine over a telephone line which includes a host computer such as a PC modified with a facsimile transmission board and a voice generation board. The host computer receives incoming phone calls and prompts the caller using  
15 the voice board to select data files by using the DTMF keys of a standard telephone handset. The

PC can be left unattended and can run automatically in the facsimile transmission mode.

Callers can immediately access needed textual and image data with the use of just a standard

5 telephone and facsimile machine. Multiple workstation nodes can be configured in a network setup to handle a high volume of calls in real time and to allow multiple data services to operate simultaneously.

10 U.S. Patent No. 5,165,095 to Mark A. Borcherding describes a method for dialing a telephone, using voice recognition to initiate the dialing and to determine the correct telephone number. The dialing is initiated with 15 a spoken dial command that is recognized by using speaker independent templates that are stored

locally with respect to the caller's telephone.

The correct telephone number is recognized by

using speaker dependent template that are

downloaded from a central database or by using

5 speaker independent templates stored locally.

U.S. Patent No. 5,168,548 to Steven Kaufman

et al. describes a reporting system which is

disclosed herein, a speech recognizer which is

used to select selections of text from a report

10 form stored in a computer and to insert

recognized terms in the text thereby to generate

a report text under voice control. A command

interpreter, also responsive to spoken words,

initiates creation of the report text and its

15 subsequent storing, printing and transmission.

The command processor is responsive to respective

spoken commands to select a destination telephone  
number and to cause the report text to be sent to  
apparatus for converting report text to image  
data and for modulating an audio band signal with  
5 the image data for facsimile transmission over  
telephone lines.

U.S. Patent No. 5,222,121 to Keiko Shimada  
describes a voice recognition dialing unit of a  
telephone mounted on a vehicle or similar mobile  
10 body and which allows a call to be originated  
with ease. When the user of the telephone enters  
a voice command on voice inputting section, the  
dialing unit originates a call automatically and  
thereby connects the other party to the telephone  
line. In a call origination procedure, the  
15 operations for call origination and the

verifications are performed between the user and  
the unit in an interactive sequence. In a  
preferred embodiment, the unit has a particular  
call origination procedure in which, when the  
5 other party recognized by the unit is wrong as  
determined by the user by verification, lower  
place candidates for the other party are called  
up in response to a particular voice command. In  
an alternative embodiment, the unit indicates the  
10 other party by voicing a name for verification  
purpose. The alternative embodiment selects and  
stores only the name of the other party in  
response to an entered voice signal and, in the  
event of response for verification, combines the  
name having been stored and response information  
15 stored beforehand to produce composite response

voice.

U.S. Patent No. 5,231,670 to Richard S.

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Goldhor et al. describes a system and method for generating text from a voice input that divides

the processing of each speech event into a

dictation event and a text event. Each dictation event handles the processing of data relating to

the input into the system, and each text event

deals with the generation of text from the

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inputted voice signals. In order to easily

distinguish the dictation events from each other

and text events from each other the system and

method creates a data structure for storing

certain information relating to each individual

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event. Such data structures enable the system

and method to process both simple spoken words as

well as spoken commands and to provide the necessary text generation in response to the spoken words or to execute an appropriate function in response to a command. Speech recognition includes the ability to distinguish between dictation text and commands.

5

U.S. Patent No. 5,239,586 to Kuniyoshi Marui

describes a voice recognition system which comprises a handset and a hands-free microphone for generating an input audio signal, a high-pass filter for eliminating low frequency components from the signal from the handset or hands-free microphone, a signal lever controller for adjusting the level of the high-pass signal in response to the user of either the handset or hands-free microphone, a storer for storing the

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speech data and a controller for controlling the  
storer so that a user's utterance is stored or  
the user's utterance is recognized by comparing  
the utterance to speech data already stored. The  
5 handset hook switch provides an on-hook control  
signal to reduce amplifier gain during hands-free  
microphone operation.

U.S. Patent No. 5,301,227 to Shoichi Kamei  
et al. describes an automatic dial telephone that  
10 is useable in a motor vehicle, when a voice input  
is provided during a period in which input of the  
names of called parties is awaited, a voice  
pattern of the name of the called party is  
compared with reference patterns of called  
parties stored in reference patterns storing  
15 device, to determine the degree of the similarity

therebetween. The names of the called parties  
are output to a user in the order of decreasing  
degree of similarity. Each time the name of a  
called party is output, a command word for  
confirmation is waited from a user for a  
predetermined time period. When a voice  
confirmation command is input and is recognized  
during this waiting period, a telephone number  
corresponding to the name of the called party is  
supplied to a channel. Consequently, the command  
word for confirmation may be input only if the  
name of the called party outputted is one desired  
by the user. Sensors continually monitor the  
driving condition of the motor vehicle in which  
the telephone is installed. When the operation  
of the steering wheel or brakes of the motor

vehicle exceeds a predetermined threshold or the speed of the motor vehicle is excessive, the sensors generate safety signals that inhibit the operation of the telephone.

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U.S. Patent No. 5,335,276 to E. Earle

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Thompson et al. describes a communication system which is provided with multiple purpose personal communication devices. Each communication device includes a touch-sensitive visual display to communicate text and graphic information to and from the user and for operating the communication device. Voice activation and voice control capabilities are included within communication devices to perform the same functions as the touch-sensitive visual display. The communication device includes a built-in modem,

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audio input and output, telephone jacks and wireless communication. A plurality of application modules are used with personal communication devices to perform a wide variety of communication functions such as information retrievable, on-line data base services, electronic and voice mail. Communication devices and application modules cooperate to allow integrating multiple functions such as real time communication, information storage and processing, specialized information services, and remote control of other equipment into an intuitively user friendly apparatus. The system includes both desktop and hand-held communication devices with the same full range of communication capabilities provided in each type of

communication device.

U.S. Patent No. 5,349,636 to Roberto

Irribarren describes a communication system for  
verbal telephonic communication which has a voice

5 message system for storing and retrieving voice

messages integrated with a computer database

accessing system for storing and retrieving text

messages from a separate computer system and for

converting the text messages into voice. The

10 systems are integrated via a network which

coordinates the functions of each individual

system. Additionally, the input/output ports of

the voice message system and the computer

database accessing system are connected in a

15 parallel fashion to at least one telephone line.

In this configuration a user may access both

voice messages and database information, including text or electronic mail messages, with a single telephone call. Optionally, facsimile messages can be stored, retrieved and manipulated with a single telephone call.

5 with a single telephone call.

U.S. Patent No. 5,406,618 to Stephen B.

Knuth et al. describes a telephone answering device that is activated by a proximity sensor when a user crosses its field of detection and whose operation is controlled by simple voice commands. The device incorporates speaker-independent voice recognition circuitry to respond to spoken commands of the user that are elicited by a system generated voice request menu. The telephone answering device performs all the basic functions of a telephone answering

machine in response to these simple commands and there is no need for the user to manually operate the telephone answering device.

U.S. Patent No. 5,602,963 to W. Michael

5 Bissonnette et al. describes a small, portable, hand-held electronic personal organizer which performs voice recognition on words spoken by a user to input data into the organizer and records voice messages from the user. The spoken words  
10 and the voice messages are input via a microphone. The voice messages are compressed before being converted into digital signals for storage. The stored digital voice messages are reconverted into analog signals and then expanded  
15 for reproduction using a speaker. The organizer is capable of a number of different functions,

including voice training, memo record, reminder,  
manual reminder, timer setting, message review,  
waiting message, calendar, phone group select,  
number retrieval, add phone number, security and  
5 "no" logic. During such various functions, data  
is principally entered by voice and occasionally  
through use of a limited keypad, and voice  
recordings are made and played back as  
appropriate. A visual display provides feedback  
10 to the user. During the various function, the  
user can edit various different data within the  
organizer by eliminating or correcting such data  
or entering new data.

U.S. Patent No. 5,621,658 to Brion K.

15 Jackson describes an action contained within an  
electronic mail object which is communicated from

a data processing system to another data processing system via an audio device. The action is executable on a data processing system.

At the sending data processing system, the action  
5 is converted to a predetermined audio pattern.

The electronic mail object may contain text in addition to an action. The text is also converted to an audio pattern. The audio patterns are then communicated to the audio  
10 device over telephone lines or other communication medium. At the receiving end, the audio device records the object. A user can provide the recorded object to a data processing system, which then executes the action and converts the text audio patterns back to text.  
15

In addition, the action can be converted to text

and displayed on the data processing system.

U.S. Patent No. 5,631,745 to John J. Wong et

al. describes a telephone terminal adapted for  
business or home use that includes the ability to

5 receive and send facsimiles, a voice answering  
function and a computer modem. Various input and  
output devices may be used for the facsimile  
function. A voice annotated facsimile may be  
sent and received. At the same time the

10 facsimile is viewed on a video monitor or  
ordinary television set, an accompanying voice  
message is heard through the sound system of the

monitor or television set. The terminal has an  
architecture including a central processor and an  
15 internal bus structure to which several types of  
memory, various input-output devices and an

interface with the telephone line are connected, among others. Audio Random Access Memory (ARAM) is used for storing both facsimile data and voice data.

5

U.S. Patent No. 5,671,328 to Gregory P.

Fitzpatrick et al. describes a method and data processing system which are disclosed for automatically creating voice processing template entries. In one embodiment, the invention automatically assembles a plurality of commands received by the data processing system, at least one of said commands having a voice recognition criteria component associated therewith, counts the occurrences of the plurality of commands, assembles voice recognition criteria components associated with the plurality of commands, and,

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as a result of the occurrence count exceeding a  
predefined minimum, constructs a voice  
recognition template entry by associating the  
assembled voice recognition criteria components  
5 with the assembled plurality of commands.

U.S. Patent No. 5,850,627 to Joel M. Gould  
et al. describes a word recognition system which  
can: respond to the input of a character string  
from a user by limiting the words it will  
10 recognize to words having a related, but not  
necessarily the same, string; score signals  
generated after a user has been prompted to  
generate a given word against words other than  
the prompted word to determine if the signal  
should be used to train the prompted word; vary  
15 the number of signals a user is prompted to

generate to train a given word as a function of  
how well the training signals score against each  
other or prior models for the prompted word;  
create a new acoustic model of a phrase by  
5 concatenating prior acoustic models of the words  
in the phrase; obtain information from another  
program running on the same computer, such as its  
commands or the context of text being entered  
into it, and use that information to vary which  
words it can recognize; determine which program  
10 unit, such as an application program or dialog  
box, currently has input focus on its computer  
and create a vocabulary state associated with  
that program unit into which vocabulary words  
15 which will be made active when that program group  
has the focus can be put; detect the available

computational resources and alter the  
instructions it executes in response; test if its  
ability to respond to voice input has been shut  
off without user confirmation, and, if so, turn  
that ability back on and prompt the user to  
confirm if that ability is to be turned off;  
store both a first and a second set of models for  
individual vocabulary words and enable a user to  
selectively cause the recognizer to disregard the  
second set of models for a selected word; and/or  
score a signal representing a given word against  
models for that word from different word model  
sets to select which model should be used for  
future recognition.

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Notwithstanding the prior art, the present

invention is neither taught nor rendered obvious thereby.

SUMMARY OF THE INVENTION

A voice activated/voice responsive item  
5 locator system is disclosed to enable a user to speak into the system and have the system respond with location information for an item requested by the user. For example, shopper at a home supply store may pick up a locator phone or just  
10 speak into a wall mounted or otherwise situated microphone and say "Locate Outdoor Paint" or "Find Hammers" or simply state what is sought without the use of a verb, e.g. "Caulking". The system may reply either with voice or visual  
15 (words on a screen, or map), or both voice and visual, e.g. "Aisle 3, Shelf 4". In some

instances the system will reply, for example,  
with a "Repeat", or "Restate in different words"  
or "Please talk to information desk" or other  
default instructions.

5           The locator system may be a stand alone  
device, but in most embodiments would be part of  
an internal connected system. It could be an  
intranet or secured internet system, but would in  
many cases be a storewide system with a plurality  
10          of user locations (units, phones, or microphones,  
with feedback at each location). The system will  
include an embedded voice-driven interface for  
speech control of: (1) operational instructions;  
             (2) core system locator function operations, that  
15          is, recognition of specific requests and  
responses thereto; and, (3) optional and default

functions. In preferred embodiments, the present invention device is both operated by speech (speech or voice activated) and speech responsive (voice answers and instructions to the user from the system). Thus, the present invention device relies upon automatic speech recognition (ASR), either in place of or in addition to manual locator systems, e.g. book, list, map and computer directories. In some embodiments, user feedback features are included wherein both audio and visual feedback is given to a user in response to recognizable voice signals, while in other possible embodiments, the user may designate audio or visual.

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BRIEF DESCRIPTION OF THE DRAWINGS

The present invention should be more fully

understood when the specification herein is taken  
in conjunction with the drawings appended hereto  
wherein:

5           Figure 1 shows a general schematic diagram  
showing software and functional features of a  
present invention item locator system;

10           Figure 2 shows a schematic diagram  
illustrating the physical functions of a present  
invention voice recognition item locator device;  
and,

15           Figure 3 shows a schematic diagram of a  
present invention device illustrating details of  
a voice recognition submodule.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

15           The present invention is a voice  
activated/voice responsive item locator and

system. By "item" is meant a place or thing that  
a user desires to locate. Thus, a item could be a  
particular brand of canned string beans, a type  
of outdoor stain, a booth at a convention, a  
particular part in inventory for sale, assemblage  
or distribution, a particular automobile in a  
production facility lot or in a large parking  
garage, or a room, afunctional group or a person  
in an office building or the like. The response  
may be in the form of a word or sentence  
presented visually or audibly and it may  
designate an aisle, a shelf, a bin number, a rom  
number, a row and slot or space, etc.

The voice recognition system digitizes words  
spoken via a receiver (microphone) handset,  
headset, or built-in microphone for conversion

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from analog to digital utilizing a continuous speech recognition digital signal processor (DSP). The main support structure may be a conventional type housing for phones and other communications devices, may be of a different shape or configuration or may be built into a device such as a wall or desk unit, with or without monitor. They could be portable or permanently affixed and could be powered by any means available, e.g. AC or DC current. In the portable mode, the system would be wireless for the user and would, in that respect operate like a cell phone, two way radio, "walkie talkie" or other short distance wireless device, but would have a processor at a central or fixed location having the same features as described above,

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i.e., the DSP with programming capabilities, etc.

The DSP is connected to a programmable microprocessor and either by customized input or a standard program, the system enables the user

5 to quickly enter voice-activated fields, e.g., such as "Where is...", "Find...", etc.

Verification of voice recognition accuracy (prior

to execution) is optional and may be accomplished via synthesized voice playback and/or a screen

10 confirmation which requires a "YES" or "NO" to execute or open for revision. In some preferred

embodiments, a screen, e.g., LCD, enables visual feedback during input phase, with support for

deletion, insertion, correction, etc.

15 Cancellation of the entire command or programming instructions may be possible at any time (prior

to execution), via keystroke or voice command.

The essential features of the present invention involve the creation of a voice based guide or locator to offer enhanced convenience and speed to users for location of one or more items.

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Figure 1 shows a general schematic diagram of a present invention system showing general software features and functional features. Thus, the present invention device includes a central processor 1 which may be an external or internal component, i.e., within a single unit or at a separate location from audio receivers and transmitters, e.g., microphones/speakers for user inputs and feedback to users.

The system may be preprogrammed with the

user being required to follow concise instructions for activation and operation, or may be programmable to alter, add or enhance ease or methods of use, e.g. through a limited access code, for manager inputs 3 of user instructions.

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In any event, manager inputs 3 shall include functional selections and inputs of items and their locations, with provision for subsequent access for modifications. This programming may

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include direct keyboard, voice, etc., and, as mentioned, may include security capabilities for preventing unauthorized use, e.g. voice

identification (user recognition) or user

security code system, as well as other options

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which may be included therein, such as a "help"

detailed manager instruction section.

Once the system has been programmed for  
use, the user operation unit(s) 5 provide  
functional access, which may be passive, i.e.,  
the user speaks, picks up a phone, presses a  
button, or otherwise takes some action to  
activate the system; or it may be active, i.e., a  
proximity sensor, a periodicity timer, or other  
internal mechanism may automatically activate the  
system and could trigger an audio or visual  
query, such as "May I help you locate a product?"

Once the system has been activated and a  
user has stated the necessary words of input to  
activate the device, recognition/non-recognition  
response 7 results from processing the user  
inputs to central processor 1, and audio and/or  
video response unit(s) 9 provide feedback 11 to

the user, either by answering the inquiry,  
conditionally defaulting, e.g., asking for a  
repeat or a restate the question, or fully  
defaulting, e.g. directing the user to a courtesy  
desk or check out counter for help.

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Figure 2 shows a schematic diagram  
illustrating a present invention voice  
activated/voice responsive item locator system,  
showing the physical arrangement and function of  
components. Thus, symbol 17 indicates an  
optional user prompter proximity sensor and  
symbol 21 is a microphone or equivalent component  
for voice input. The voice input is sent to  
audio controller 19 and to automatic speech  
recognition unit 23 and is converted from analog  
to digital signals. CPU/Memory 25 compares the

digital signals to the set up or dictionary of digital words or phrases in memory. Once a match is found, the system processor 27 and data storage 31 operate to respond with an answer or a default instruction or a query by providing digital text to text-to-speech generator 29, which provides audio feedback to a user via audio controller 19 and speaker 33. Feedback to a user may also be provided on visual screen 37 via display controller 35. Keyboard 39 is used for manager set up and modifications.

Figure 3 shows the details of one preferred embodiment of the submodule used in the present invention device. The voice recognition component converts an acoustic signal into a sequence of labels. The system takes the raw

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acoustic data, and processes it through the recognizer. The recognizer then matches it against a set of models using a decoder that generates a recognition token. This token represents what the user said as either a single word or utterance. The recognizer itself does not interpret the meaning of the recognized output, that is the function of the interpreter (described later). The recognizer uses Hidden Markov Models (HMMs) to provide for a continuous speech recognition engine. HMMs do not process the acoustic signal directly but instead split the signal into a sequence of discrete observations. These observations are derived from a digital representation of the signal that had been converted from the analog signal

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generated by the microphone. During recognition,  
the likelihood of each model (or sequence of  
models) matching the incoming signal is  
calculated. The recognizer simply selects the  
most likely model to decode the signal. As this  
is done continuously, the recognizer can process  
speech as opposed to isolated words, allowing the  
user to talk more naturally.

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Each acoustic model represents a short  
sound. The interpreter combines these sounds  
into words using a dictionary. This dictionary  
specifies the pronunciation of each word in terms  
of the acoustic models. After identifying the  
most likely word, the interpreter then joins sets  
of models together (using a Viterbi decoder) in a  
series of pre-defined connections such that paths

can be established to provide for a degree of  
"natural language" recognition; in other words,  
the user can say "Find hammers", "Where are  
hammers" or "hammers" and they are all understood  
5 to mean the same thing. Moreover, these sets of  
models and dictionaries are interchangeable,  
allowing the same voice recognition component to  
be used in a variety of applications.

As the voice recognition component is  
10 running continuously, there needs to be a way to  
distinguish background conversations that might  
accidentally trigger an unwanted action by the  
device. For example, two people standing by a  
voice-activated device might be discussing  
15 locations of different goods in a supermarket and  
be misinterpreted or undesireably responded to.

To avoid this problem, the recognition unit requires a command word to trigger before beginning further recognition. The trigger word is a user-definable setting.

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Thus, in Figure 3, initialization 51 initiates monitoring 53 for a trigger word from a user. When a word is received, it is analyzed to determine whether or not a trigger word 55 has been received. If not, signal 57 returns the status to monitoring 53 for a new word. This loop continues until a trigger word is recognized and an inactivity timer 59 is started. The monitor 61 proceeds with the monitoring for the next word and waits for timer pop 65. When an event 63 is received, timer pop 65 returns to the monitor 53 to continue the monitoring process and

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the voice data is sent to interpretation 67. If it is understood 69, an action 75 if process and feedback function 77 is performed. Additionally,

signal 79 prompts user 71. Likewise, if the

5 interpretation is not understood 69, user 71 is

prompted and via signal 73, timer 59 begins

again. These cyclings operate on a continual

basis while the system is initiated. Voice

activation may also be used to shut down the

10 system.

Obviously, numerous modifications and

variations of the present invention are possible

in light of the above teachings. It is therefore

understood that within the scope of the appended

15 claims, the invention may be practiced otherwise

than as specifically described herein.

WHAT IS CLAIMED IS:

1. An item locator system having both voice activation and voice responsive capabilities for location feedback to locate one or more specific items, which comprises:

a.) a support structure, for physically supporting said system at one or more locations, and functionally containing or connected to the following components:

b.) a continuous speech recognition digital signal processor (DSP);

c.) a programmable microprocessor interfaced with said speech recognition DSP;

d.) sufficient programming and circuitry

user feedback unit, said at least one

user feedback unit adapted to provide

feedback selected from the group

consisting of audio feedback, visual

feedback and combinations thereof, to a

user in response to an item location

query.

2. The system of claim 1 wherein said user feedback unit includes visual display means for viewing visual feedback in the form of text, or map or a combination thereof.

3. The system of claim 1 wherein said user feedback unit includes sufficient hardware and software to provide audio feedback to a user in response to recognizable voice input.

4. The system of claim 1 wherein said memory storage means further includes flash ROM storage and provides for remote diagnostics and system programming.

5. The system of claim 1 wherein said voice input means includes a microphone.

6. The system of claim 1 which further includes a secured manual control panel for input and management of item and location data into said system.

7. The system of claim 6 wherein said manual control panel further contains a keypad and menu for operation and programming options, a microphone, a screen for input and feedback display.

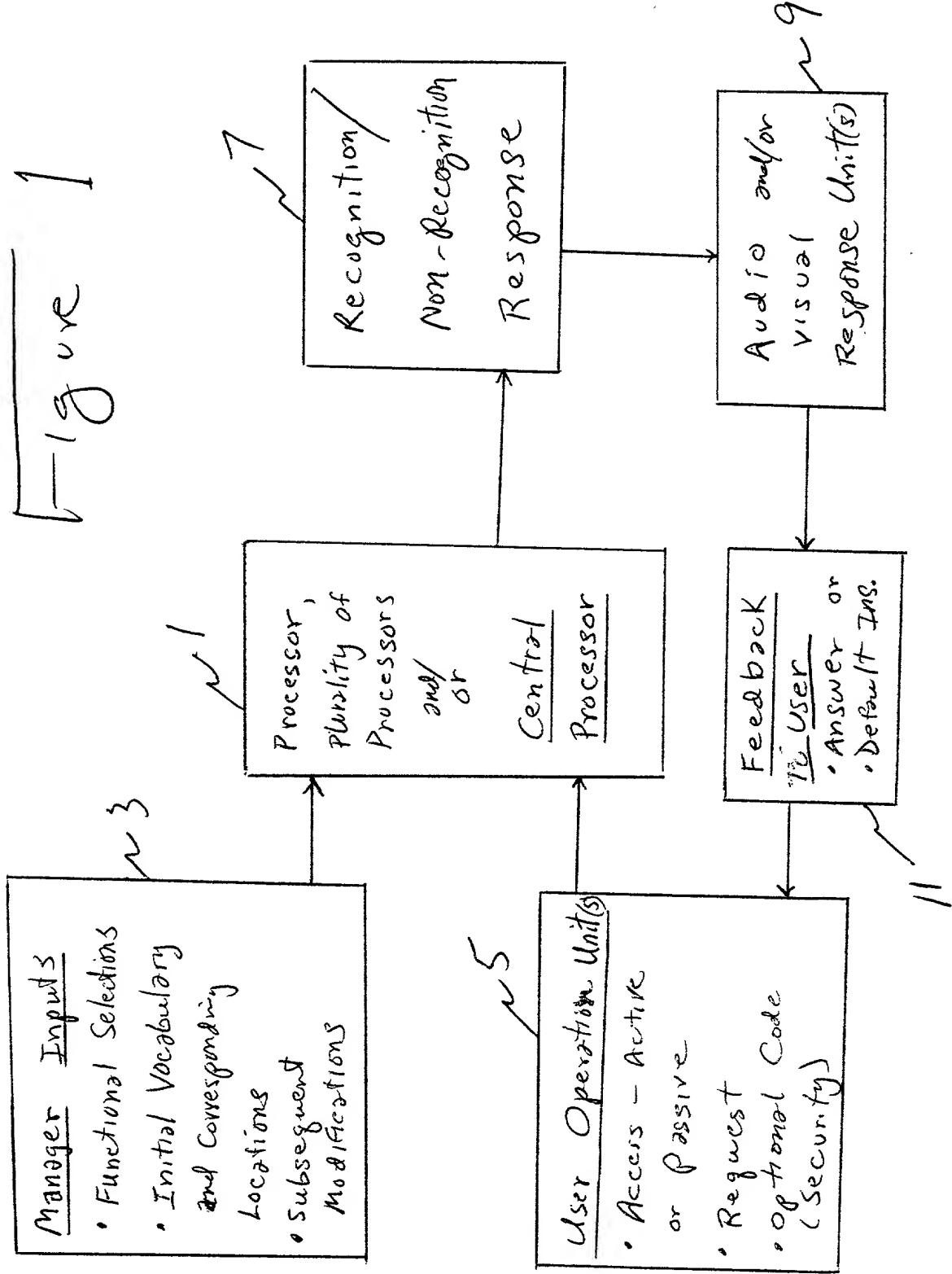
8. The system of claim 1 which additional components further includes an audio feedback component which includes audio feedback hardware and software adapter to audibly respond to recognizable voice input, including digital-to-analog conversion and an output speaker.

9. The system of claim 1 wherein said DSP includes a continuous speech recognition engine having a continuous speech signal recognizer and a continuous speech signal interpreter.

10. The system of claim 9 wherein said continuous speech recognition engine utilizes tokens of raw acoustic signals representing utterances or words and matches these against a set of models and then relies upon likelihood to select a most likely model to decode signals for interpretation.

ABSTRACT OF THE DISCLOSURE

The present invention is an item location system which relies upon voice activation and responsiveness to identify location(s) of item(s) sought by a user. The system includes a continuous speech recognition digital signal processor, a programmable microprocessor interfaced therewith, voice input and user feedback mechanisms, including audio and/or video feedback. Preferred embodiments utilize audio feedback to the user. The continuous speech recognition engine utilizes Hidden Markov Models to create real time continuous speech recognition and feedback.



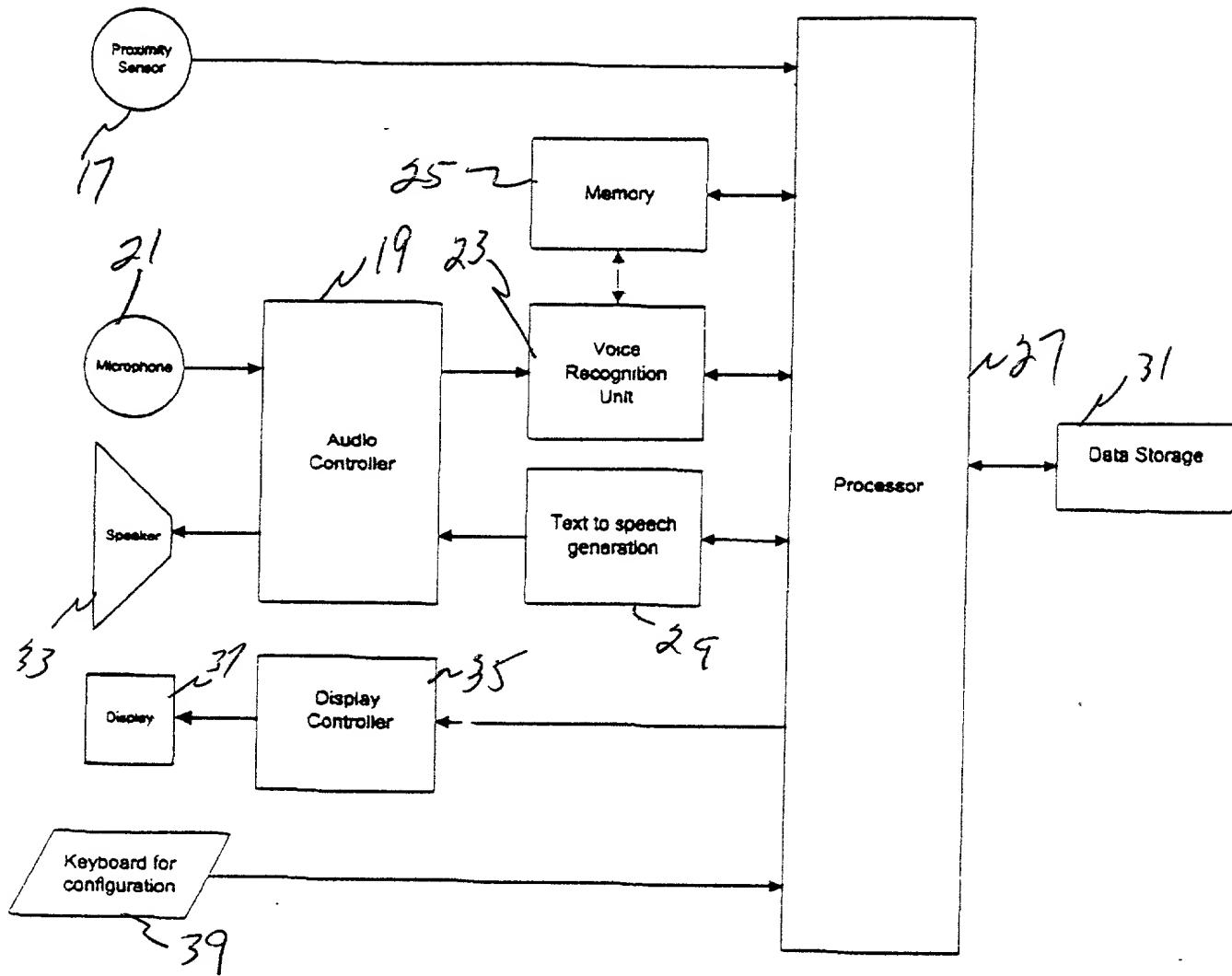
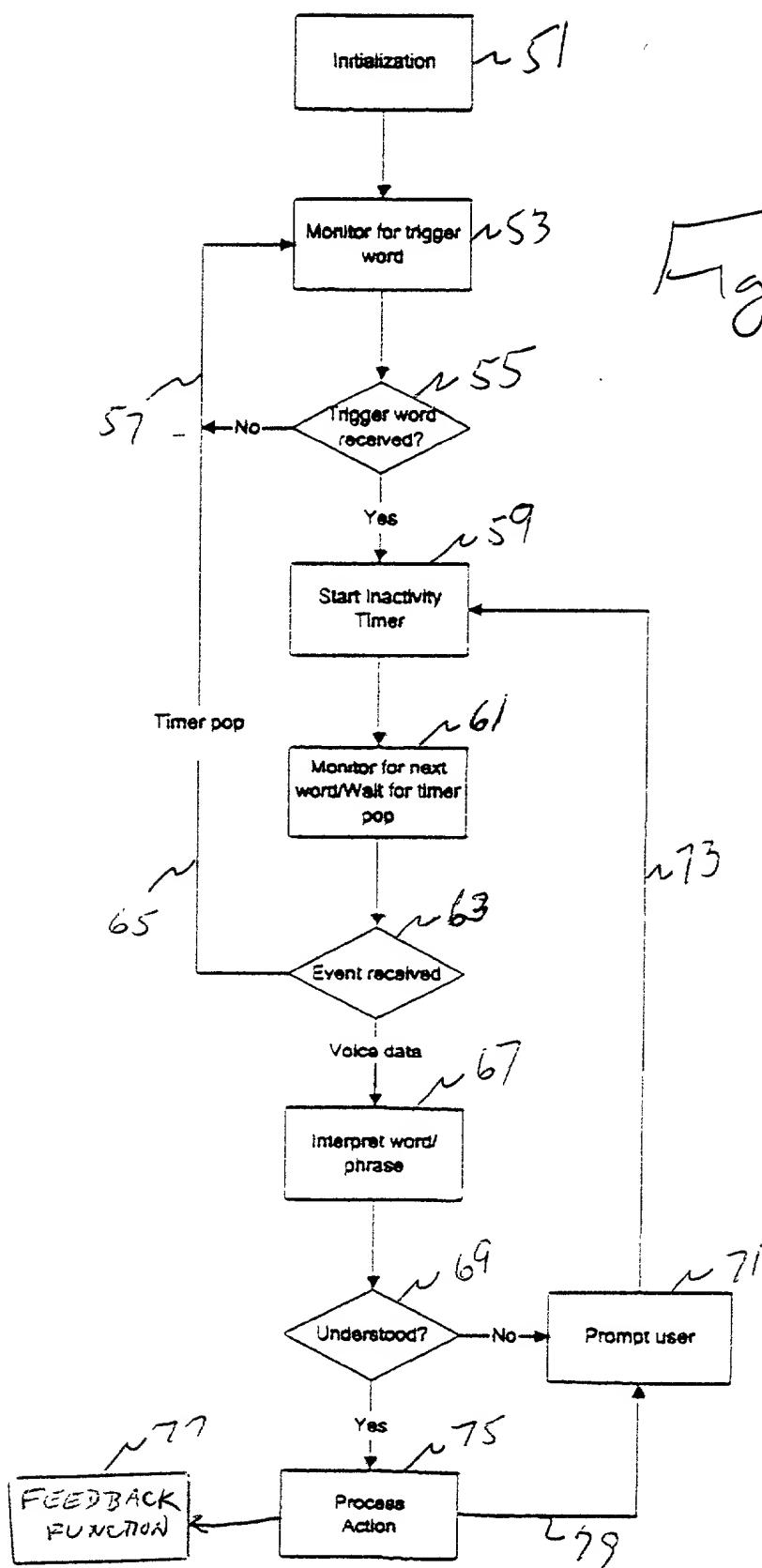


Figure 2

Figure 3



IVC-103A

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COMBINED DECLARATION AND POWER OF ATTORNEY  
IN ORIGINAL APPLICATION

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As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought for the invention entitled:

Voice Activated/Voice Responsive Item Locator

the specification, of which is attached hereto, that I have reviewed and understand the contents of the attached specification, including the claims, that I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application filed by me or my legal representatives or assigns more than twelve months prior to this application that I acknowledge my duty to disclose information of which I am aware which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations 1.56(a) and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows:

FOREIGN APPLICATIONS FILED WITHIN 12 MONTHS PRIOR TO THE FILING OF THIS APPLICATION:

None

FOREIGN APPLICATIONS FILED MORE THAN 12 MONTHS PRIOR TO THE FILING OF THIS APPLICATION:

None

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

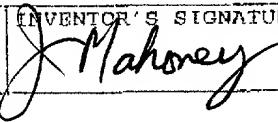
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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